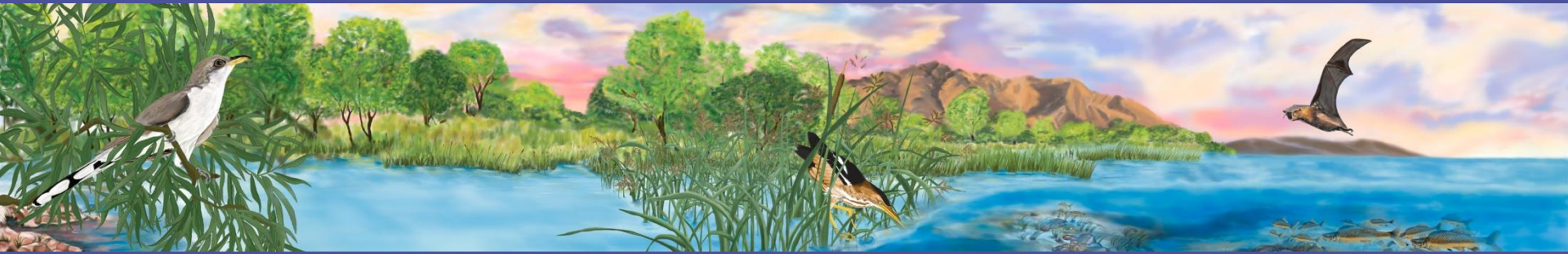


Lower Colorado River Multi-Species Conservation Program



Balancing Resource Use and Conservation

LOWER COLORADO RIVER MULTI-SPECIES CONSERVATION PROGRAM



Final Implementation Report, FY21 Work Plan and Budget, FY19 Accomplishment Report

Lower Colorado River Multi-Species Conservation Program



Balancing Resource Use and Conservation

LCR MSCP FY19 Overview Funding Summary

FY19 Total Required Funding	FY19 Approved Estimate	FY19 Actual Obligations	Cumulative Program Accomplishment
\$31,960,488.00	\$38,398,788.00	\$34,470,241.30	\$332,433,005.08



Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

FY19 Program Element Accomplishment

Program Administration	\$ 1,133,593.18 (3%)
Fish Augmentation	\$ 2,407,700.10 (7%)
Species Research	\$ 768,487.03 (2%)
System Monitoring	\$ 2,395,308.66 (7%)
Conservation Area D&M	\$ 22,746,010.55 (66%)
Post Development Monitoring	\$ 2,463,509.84 (7%)
AMP	\$ 1,295,047.27 (4%)
Remedial Measure Fund	\$ 1,147,832.00 (3%)
Public Outreach	\$ 112,752.67 (1%)
TOTAL	\$ 34,470,241.30



Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

FY19 Financial Accomplishments

- Obligations under approved Work Tasks by \$3,928,546.70
 - Construction costs less at Mohave Valley Conservation Area and Cibola Valley Conservation Area
 - AMP savings in Data Management, Research, and Habitat Monitoring
- Status of Special Funds
 - HMF: Cumulative Total through FY19 = \$36,967,064.61
 - RMF: \$1,147,832.00 FY19 payment
 - Cumulative Total through FY19 = \$9,142,832.05
 - LWF: \$0 contributed in FY19 but \$9,730,000 withdrawn (DUCA)
 - Cumulative Total through FY19 = \$5,670,000

Lower Colorado River Multi-Species Conservation Program



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FY19 Fisheries Accomplishments



Razorback sucker contacted via remote PIT scanning (Reach 2)



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Larvae Collection and Fish Augmentation

Larvae collected from Lake Mohave: **44,806**

Augmentation

Reach 2 (RASU 5): 6,185 RASU > 300 mm

Reach 3 (RASU 3): 6,060 RASU > 300 mm

Reaches 4/5 (RASU 3): 13,090 RASU > 305 mm

Total RASU (credited): **25,335**

Reach 2 (BONY 3): 220 BONY > 300 mm

Reach 3 (BONY 3): 1,026 BONY > 300 mm

Reaches 4/5 (BONY 3): 7,013 BONY > 305 mm

Total BONY (credited): **8,259**



Razorback sucker larvae attracted to submerged light



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Fish Augmentation Summary FY05-19

SPECIES	LAKE MOHAVE	DAVIS-PARKER	BELOW PARKER	GRAND TOTAL	AUGMENTATION TOTAL
RAZORBACK SUCKER	132,201*	100,146	112,267	344,614*	212,413
BONYTAIL	2,330	60,065	46,125	108,520	108,520
TOTAL	134,531*	160,211	158,392	453,134*	320,933



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Augmentation Accomplishment

REACH	BONYTAIL			% COMPLETE	RAZORBACK SUCKERS			% COMPLETE
	HCP Goal	Current	Remaining		HCP Goal	Current	Remaining	
All	620,000	108,520	511,480	17.5	660,000	212,413	447,587	32

- Based on the overall augmentation goal for bonytail, we are currently 17.5% complete. Hatchery production capacity has been increased and development of additional rearing habitat will be completed to meet future year goals
- Based on the overall augmentation goal for razorback suckers, we are currently 32% complete



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Balancing Resource Use and Conservation

Fisheries Monitoring

Reach 1

- 46 razorback suckers were captured by trammel net during the spawning season
- 130 razorback suckers were contacted by remote PIT scanning
- The current Lake Mead razorback sucker population estimate is 248 individuals

Reach 2

- 37,258 hours of PIT scanning contacted 4,408 unique razorback suckers
- The current Lake Mohave RASU population estimate is 3,649 individuals

Reach 3

- 5,552 razorback suckers, 51 bonytail, and 25 flannelmouth suckers were contacted
- The current Reach 3 razorback sucker population estimate is 4,791 individuals

Reach 4 and 5

- 1,861 razorback suckers and 347 bonytail were contacted using multiple methods
- The current razorback sucker population estimate is 147 individuals





Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

Highlights

- C64: Post-Stocking Movement, Distribution, and Habitat Use of Razorback Suckers and Bonytail
- Reach 4 - Discovery of a razorback sucker aggregation site in the main channel (300 contacts)
 - Known aggregation sites are important for improving annual monitoring
- F5: Post-Development Monitoring of Fishes at Conservation Areas
- Mohave Valley Conservation Area – 1,931 razorback suckers contacted

Updates

- D15: Genetic Monitoring and Management of Native Fish Populations
- Use of new genotyping methods will be expanded, a central repository for tissue samples will be established and maintained, and a widely accessible genetic database will be developed
- B5: Bubbling Ponds Fish Hatchery
- Renovations of the Bubbling Ponds Fish Hatchery scheduled for FY21
 - AZGFD does not anticipate producing razorback suckers for the LCR MSCP for at least 3 years

FY19 Wildlife Accomplishments

Species Research

Just one research project ongoing:

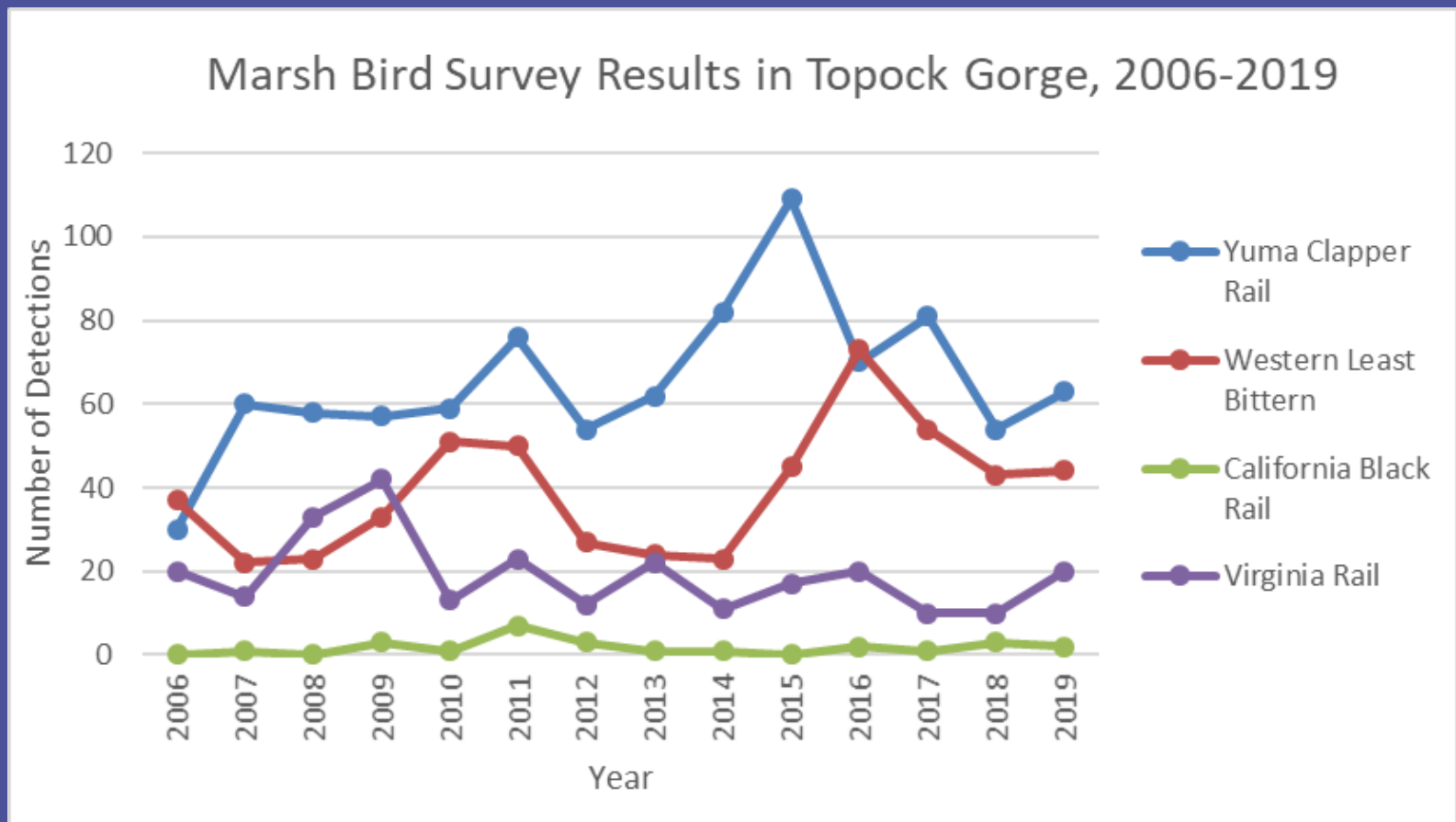
- C2 – Contributed \$10,000 a year to a conservation program for **threecorner milkvetch** and **sticky buckwheat** at Lake Mead.

System-wide and Post Development Monitoring

- marsh birds
- southwestern willow flycatcher
- yellow-billed cuckoo
- gilded flicker
- riparian birds
- bats
- rodents
- McNeill's sootywing



- **Yuma clapper rails** were detected at Hart Mine Marsh, Field 18 at Imperial Ponds, and Yuma East Wetlands, as well as marsh areas of Beal Lake Conservation Area and Laguna Division Conservation Area.



- **Southwestern willow flycatcher**
 - 158 flycatchers from 95 territories were recorded at Topock Marsh, the Bill Williams River, and Alamo Lake, Arizona.
 - No resident breeding southwestern willow flycatchers were detected at LCR MSCP conservation areas.
- **Yellow-billed cuckoo** – Cuckoos were detected at BLCA, Cibola NWR Unit #1, CVCA, Hunters Hole, LDCA, Middle Bill Williams River NWR, Planet Ranch, PVER, and YEW.
 - 20 confirmed territories, 26 probable territories and 31 possible territories and 17 confirmed nests at LCR MSCP conservation areas
- **Gilded flicker** - Detected for the first time at PVER on June 12 and July 28. Not yet observed at conservation areas during nesting season.



Other Species Highlights:

- Arizona Bell's vireo, Gila woodpecker, Sonoran yellow warbler, summer tanager and vermilion flycatcher were detected at LCR MSCP conservation areas during the breeding season.

	Beal Lake Conservation Area	Cibola NWR Unit #1	Cibola Valley Conservation Area	Hunters Hole	Laguna Division Conservation Area	Middle Bill Williams River NWR	Palo Verde Ecological Reserve	Parker Dam Camp	Pretty Water Conservation Area	Yuma East Wetlands
Arizona Bell's vireo	Breeding				Breeding	Breeding	Breeding			
Gila woodpecker		Breeding	Breeding		Breeding	Breeding		Breeding		Breeding
Sonoran yellow warbler	Breeding	Breeding	Breeding		Breeding	Breeding				
summer tanager	Breeding	Breeding	Breeding			Breeding	Breeding			
vermilion flycatcher		Breeding								

Other Species Highlights:

- **Yuma hispid cotton rat** continued to be detected at Laguna Division Conservation Area and Hunters Hole
- **Colorado River cotton rats** continued to be captured at PVER, Cibola NWR Unit #1, the CVCA, and HMM
- **MacNeill's sootywing skippers** continue to be detected at conservation areas containing quailbush
- **Western red bats** and **western yellow bats** continued to be monitored at conservation areas acoustically and are detected throughout the system.



Lower Colorado River Multi-Species Conservation Program



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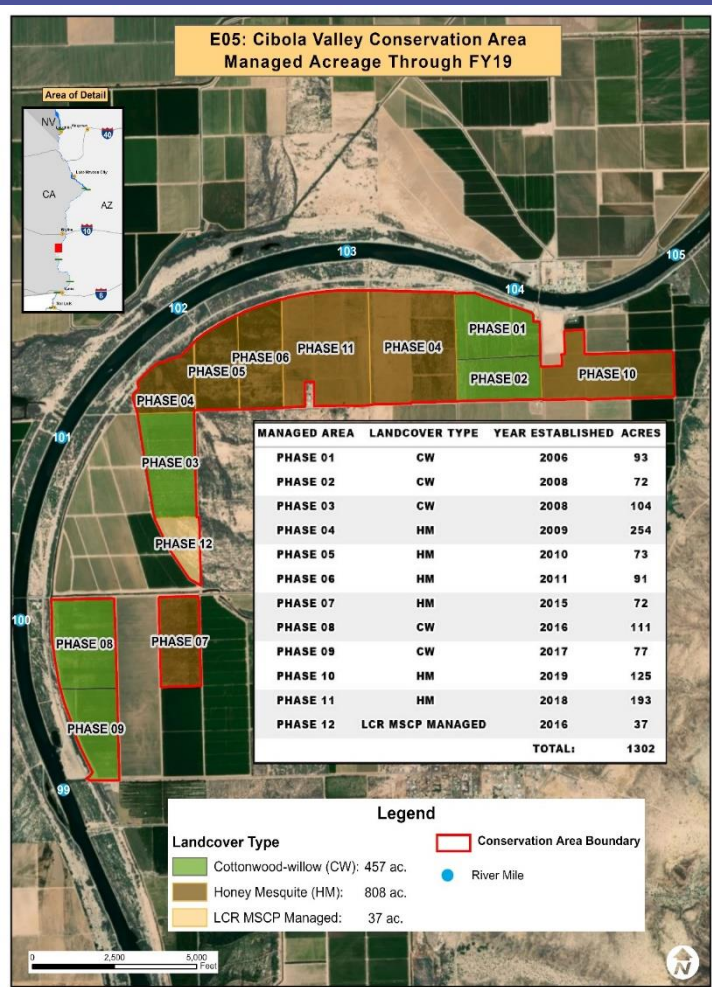
FY 19 Conservation Area Development Accomplishments

- Cibola Valley Conservation Area Planting HM
- Cibola NWR Unit #1 Planting CW
- Dennis Underwood “officially” a Conservation Area & Planting HM
- Mohave Valley Conservation Area Completed
- Beal Lake Dredging Starts
- Planet Ranch Construction Starts

Lower Colorado River Multi-Species Conservation Program



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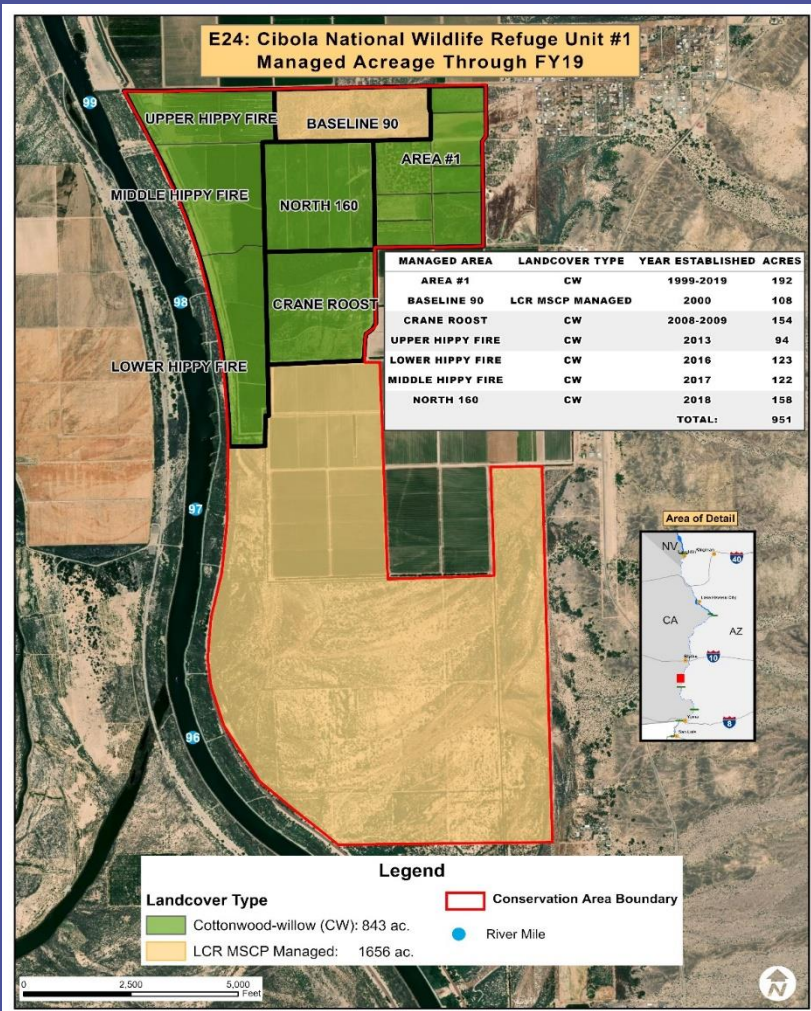


Cibola Valley Conservation Area

- Phase 10 Planted
- Established 125 acres of CW
- Development is Complete

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Balancing Resource Use and Conservation



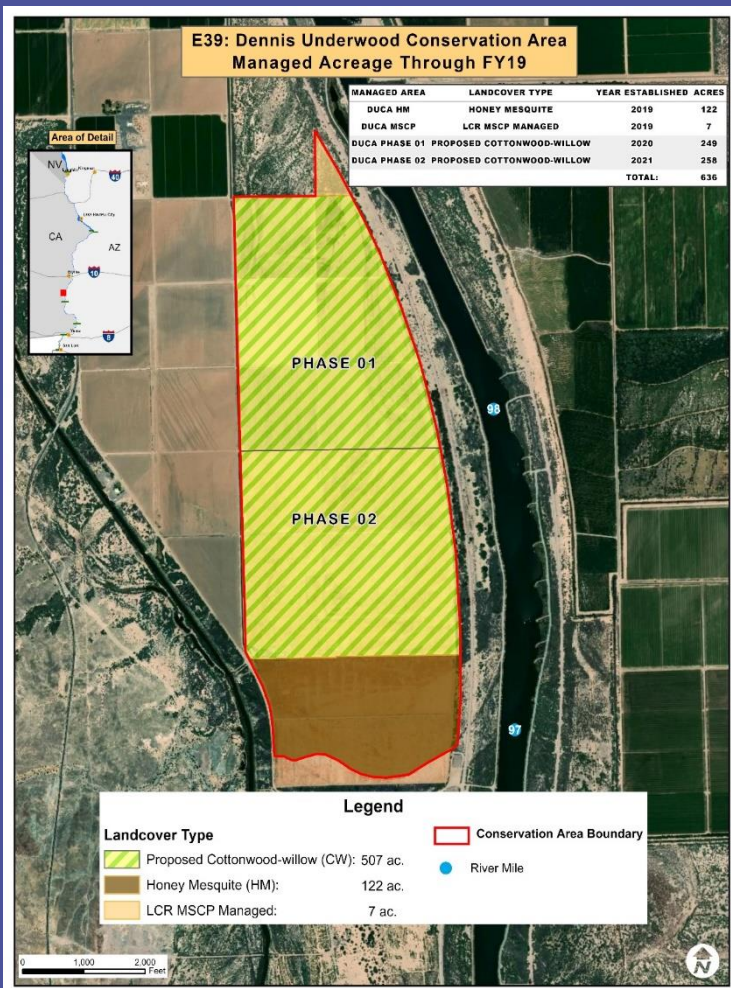
Cibola Refuge Unit #1

- Planted 57 acres of CW
- Development is Complete
- Planning for Expansion Area Initiated

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Balancing Resource Use and Conservation



Dennis Underwood Conservation Area

- Officially a Conservation Area
- Planting of 122 acres of HM

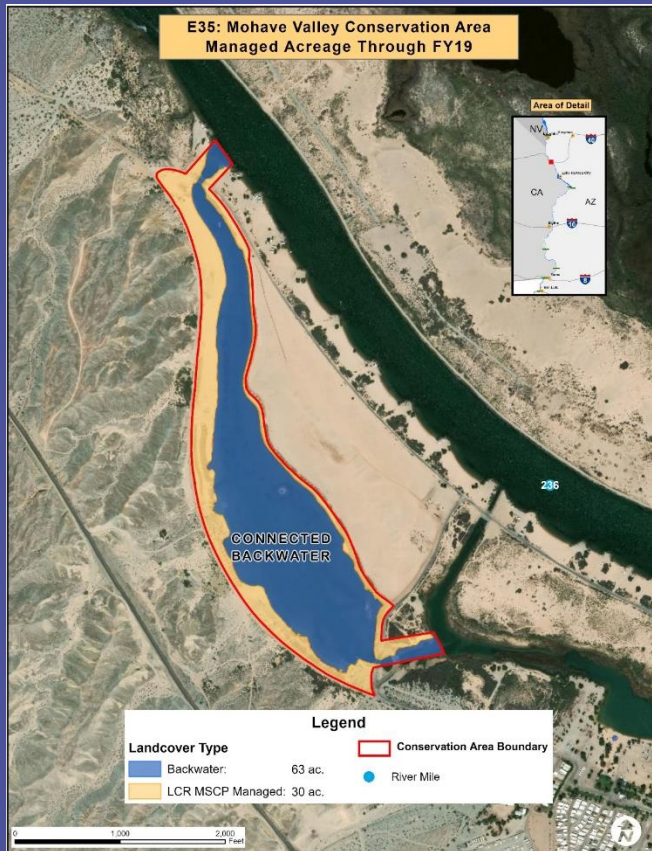
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Balancing Resource Use and Conservation

Mohave Valley Conservation Area

- 63 acres of connected Backwater



Lower Colorado River Multi-Species Conservation Program



Balancing Resource Use and Conservation

Beal Lake Dredging Starts (100,000 cubic yards)



Lower Colorado River Multi-Species Conservation Program



Balancing Resource Use and Conservation

Planet Ranch Pond Excavation Starts (300,000 cubic yards)



Lower Colorado River Multi-Species Conservation Program



Balancing Resource Use and Conservation

Conservation Area Acreage Summary (Table 1-15)

- 6,437 acres of Established Land Cover through FY19
- 8,733 acres of Planned Land Cover Type
- 11,764 acres of LCR MSCP Managed Acreage
- 14,067 acres of Total Conservation Area

Note: Minimum is 8,132 acres

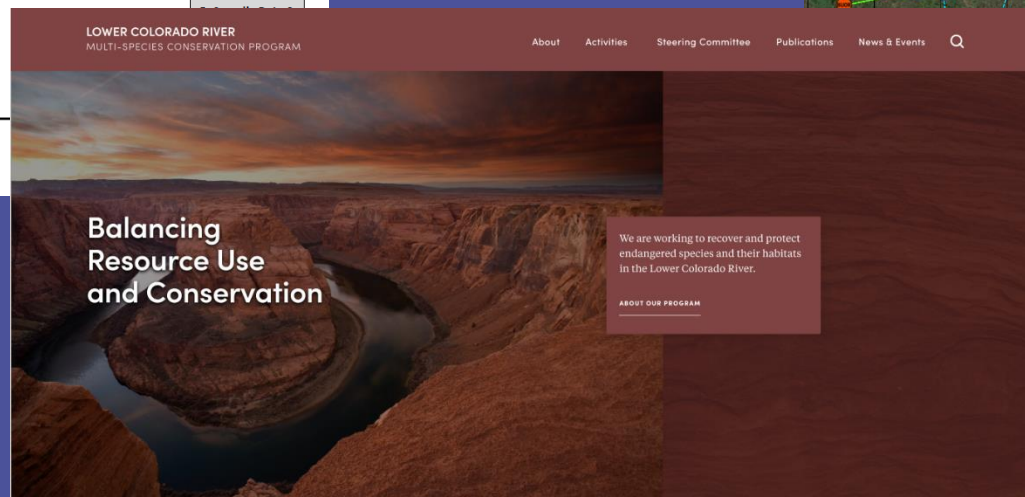
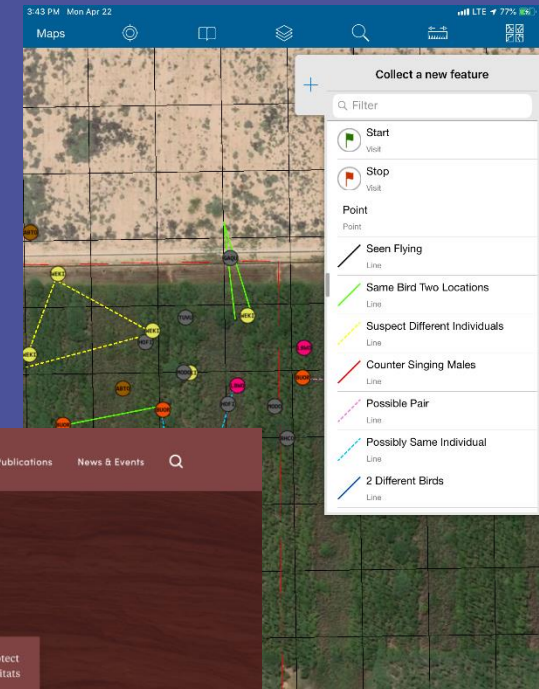
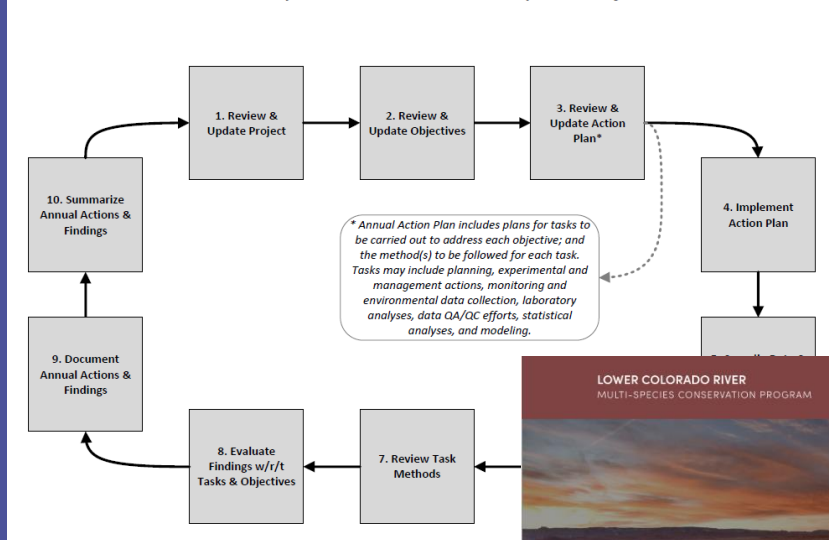


Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

FY19 Adaptive Management Program Accomplishments

Annual Cycle of A.M. Efforts per Project





Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

Adaptive Management

General accomplishments

- Peer review (25 research and monitoring reports)
- Study plan designs and statistical analyses
- Adaptive Management Plans
- Conceptual Ecological Models

Fish-related accomplishments

- Fish genetics review
- Continued support of the LCR Native Fish Database and the Remote Scanning database

Wildlife-related accomplishments

- Riparian bird monitoring review continues
- Field data collection improvements
- Reporting automation



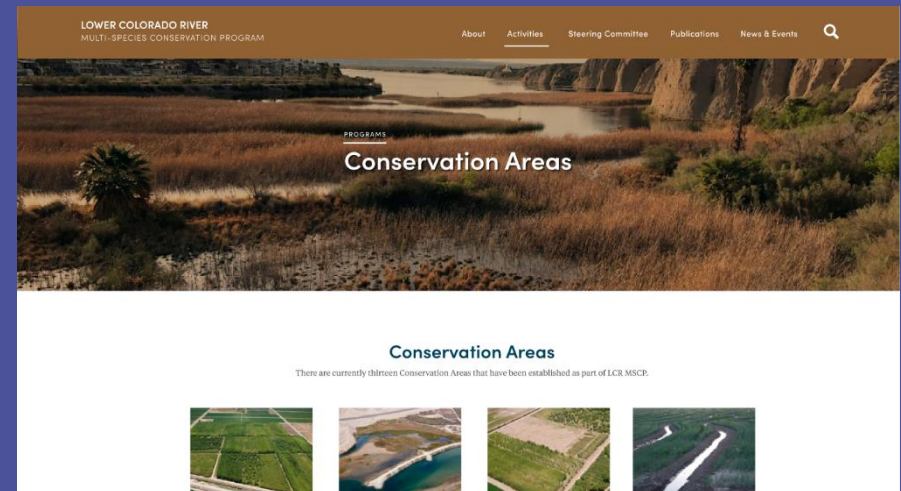
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Data Management

Data management accomplishments

- Improvements in field data collection techniques and data processing workflows
- Development of QA/QC tools for MSCP staff and contractors
- Automation of reports
- LCR MSCP website redesign
- Data sharing



Lower Colorado River Multi-Species Conservation Program



Balancing Resource U

Salinity and Soil Moisture Monitoring

Established network at six conservation areas:

- Beal Lake Conservation Area
- Palo Verde Ecological Reserve
- Cibola National Wildlife Refuge Unit #1
- Cibola Valley Conservation Area
- Yuma East Wetlands
- Hunters Hole

Expanded to additional sites in 2019

- Imperial Ponds
- Three Fingers Lake

Parameters:

- Soil moisture and salinity
- Groundwater level and salinity



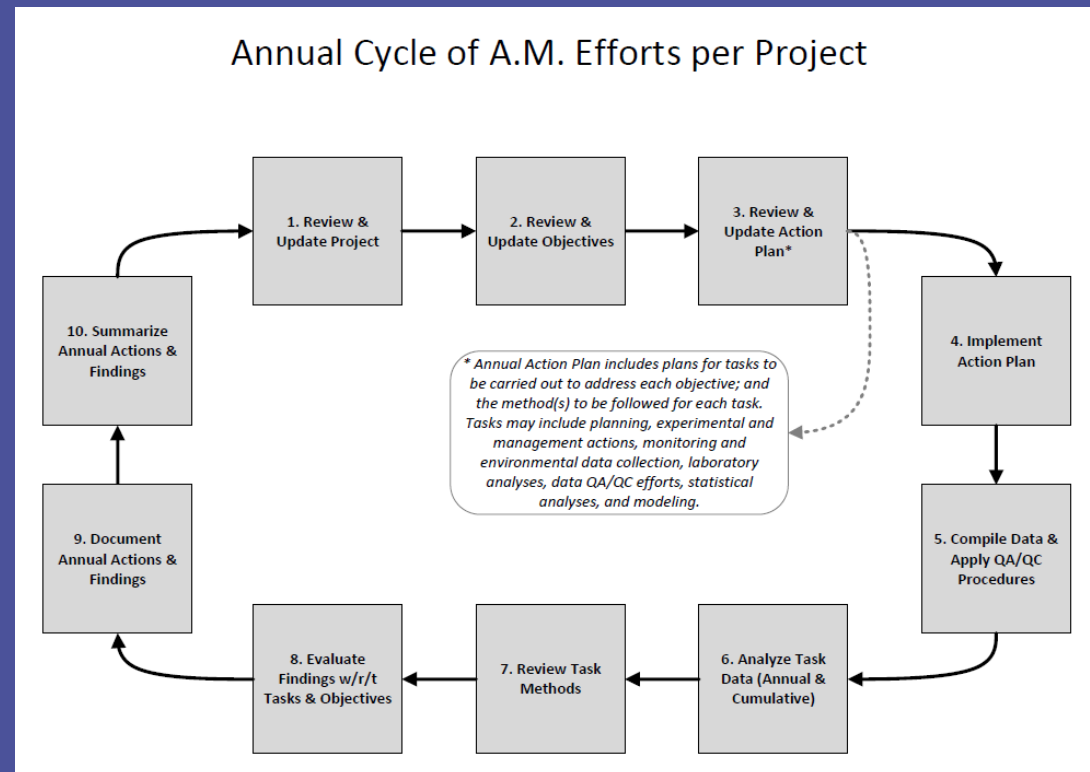


Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

Adaptive Management Plans

- Formalize all existing research and monitoring plans into a standardized format
- Ensure they contain all components referenced in HCP
- Ensure that our monitoring and research provides necessary information for the Adaptive Management Program and other LCR MSCP needs



Lower Colorado River Multi-Species Conservation Program



Balancing Resource Use and Conservation

Proposed FY21 Program Work Plan and Budget





Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

FY21 Funding Requirements
(Preliminary Inflation Rate = 1.518%)

Funding Entity	FY21 Contributions	FY21 Adjusted Contributions
Federal	\$15,166,338.00	\$15,166,338.00
Non-Federal	\$15,166,338.00	\$15,166,338.00
<i>California</i>	<i>\$ 7,583,169.00</i>	<i>\$ 7,183,572.58</i>
<i>Arizona</i>	<i>\$ 3,791,584.50</i>	<i>\$ 4,590,777.34</i>
<i>Nevada</i>	<i>\$ 3,791,584.50</i>	<i>\$ 3,391,988.08</i>
TOTAL	\$30,332,676.00	\$30,332,676.00



Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation FY21 Proposed Work Plans

Program Administration	\$ 1,545,324
Fish Augmentation	\$ 2,060,000
Species Research	\$ 766,000
System Monitoring	\$ 3,135,000
Conservation Area D&M	\$ 12,561,000
Post Development Monitoring	\$ 2,695,000
AMP	\$ 1,390,000
Remedial Measures Fund	\$ 1,208,328
Public Outreach	\$ 125,000
Land and Water Fund	\$ 0
TOTAL FY19 BUDGET	\$ 25,485,652*

*The proposed annual program budget is less than the minimum required funding due to current construction capability. The balance will be held in reserve by Reclamation and used in future years to complete conservation measure requirements, especially habitat creation and management activities.